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Class I, HEXAPODA.

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### THE NORTH AMERICAN SPECIES OF COTALPA.

By H. F. WICKHAM,

IOWA CITY, IOWA.

Six species of *Cotalpa* have thus far been described from the United States, and two from Central America. None are known to occur south of Guatemala, nor does the genus appear in the Old World. Our species have been described at divers times, and while the genus has been tabulated twice by Dr. Horn, neither of his synopses is complete as to species and the discovery of a seventh form seems to indicate that a new table would not be out of place.

It will be noticed that our species divide readily into two series, according to the punctuation of the pronotum and the presence or absence of long hair on the upper surface of the body. This offers a convenient and apparently natural basis for primary division, much more readily appreciable than the structure of the mandibles and of the mentum, though these points are extremely useful in separating the species in later analysis. In fact, the species of *Cotalpa* are more easily recognized by direct comparison than by description, the differences in form being difficult of exact verbal diagnosis. The following scheme will serve for their recognition.

- A. Prothorax finely punctured, body above not hairy.
- b. Head, pronotum and scutellum distinctly metallic, under surface and legs also with metallic reflections. Elytra yellowish.
- c. Form more elongate. Outer edge of mandible nearly straight, inner apical angle with broad deflexed tooth, .80-.90 in. *consobrina* Horn.

cc. Form robust, outer edge of mandible broadly rounded.

Elytral punctuation fine, mostly well separated, .80-1.08 in.

*lanigera* Linn.

Elytral punctuation coarse and crowded, extensively confluent transversely, .68-.75 in.

*subcribrata* n. sp.

bb. Yellowish or testaceous above, with no metallic lustre; under surface piceous black, .90-1.00 in.

*flavida* Horn.

AA. Prothorax very coarsely punctured, body above hairy.

d. Prothorax very densely and confluent punctured, the hairs of this part very long, fine and abundant, .56-.72 in.

*granicollis* Hald.

dd. Prothorax deeply and coarsely but not conspicuously confluent punctured.

Larger (.85 in.). Mentum deeply emarginate.

*puncticollis* Lec.

Smaller (.52-.62 in.). Mentum rather feebly emarginate.

*ursina* Horn.

*C. consobrina* Horn, Trans. Amer. Ent. Soc., III, 1871, p. 337. Readily distinguished at sight from our other glabrous species, by the more elongate form of the body. The original specimens came from Fort Whipple, Arizona, but it is now known from several other points in the southern part of that Territory. I have taken it in numbers at light in Phoenix and Nogales, and in still greater abundance at Tucson, where it swarms about the arc-lights by the hundred. During the day I have met with it clinging to the smaller twigs of the "palo verde" on the hills near Tucson.

*C. lanigera* Linnæus, Systema Naturæ (Edit. X), 1760, p. 350. This common species occurs from Kansas eastward and exhibits considerable variation in size and in punctuation; the greater measurement cited in the table is taken from a specimen secured at Bayfield, Wisconsin, in which the sides of the prothorax are more rapidly and less arcuately narrowed behind than usual. This individual has the sides of the elytra subangulate, with a well marked tubercle in the angulation, like the females of *C. flavida*. Dr. Harris (Insects Injurious to Vegetation, p. 25) says that *C. lanigera* attacks the leaves of the pear, elm, hickory, poplar and probably other trees. It is frequently attracted to lights.

A curious variety of this species, with the label Prescott, Arizona, has been loaned me by Mr. Chas Fuchs. While it has all the essential characters of *C. lanigera*, it is colored in such a manner as to present a totally different appearance. The metallic lustre of the head and thorax is more pronounced, the pronotum broadly brownish at the sides; the elytra are ornamented by a common brown sutural

stripe, extending the entire length, narrower at apex and extending along the basal margins to the humeri where it is recurved, giving somewhat the appearance of a broad T. I propose for it the name *Cotalpa tau*.

*C. subribata* n. sp. Form robust, as in *C. lanigera*. Above yellowish, head, pronotum and scutellum greenish with metallic reflections, pronotal margin dark green. Head densely, confluent punctured in the region of the clypeal suture, the punctures growing sparser towards the occiput, which is smooth and polished. Clypeus slightly transversely convex, margin narrowly reflexed, angles broadly rounded, front edge nearly straight, surface densely and somewhat confluent punctured. Mentum emarginate anteriorly, the lower face with two obtusely elevated ridges arising near the front angles and converging posteriorly. Terminal joint of maxillary palpi deeply impressed. Pronotum a little less than twice as broad as long, widest near the middle, base broader than apex, sides arcuate, not angulate, surface polished and with double punctuation; the larger punctures are distant and fairly uniformly distributed except near the sides, where they become crowded, the fine ones following the same general plan. The side margins thus acquire a rugulose appearance. Median line vague, visible only in certain lights. Scutellum green, rather coarsely punctured, more densely near the base. Elytra dull yellowish, not metallic, strongly, closely and subconfluent punctate over their entire surface. Body beneath dark green, shining, more or less metallic, thickly punctured and hairy, the middle of the abdomen less densely clothed than the rest. Legs yellow with metallic green reflections, tarsi darker. Length, .68-.75 inch.

This form is most nearly allied to *C. lanigera* Linn., but presents a very different appearance on account of the coarse and close punctuation of the elytra and the much smaller size. My specimens are all females, one of them showing the subangulate elytral margin with accompanying tubercle which is so well marked in *C. flavida* (and which occurs less frequently in *C. lanigera*) while in the other two this structure is wanting.

Described from three specimens taken by Mr. Warren Knaus at Medora, Kansas, in July. In response to inquiry, Mr. Knaus writes me that all of his specimens from southwestern Kansas agree in the small size and strong punctuation so characteristic of this insect.

*C. flavida* Horn, Trans. Amer. Ent. Soc., VII, 1878, p. 53. Of

the size and general appearance of *C. lunigera*, but easily separated by the lack of metallic lustre and the much stouter legs. Described from specimens taken by Dr. Palmer, at St. George, Utah. I have since collected it at the same place, in June. A good series, taken on willows at Green River, Utah, by Professor Arthur G. Smith, is also in my cabinet. Mr. Fuchs has sent me one from Prescott, Arizona.

*C. granicollis* Haldeman, Stansbury's Explorations and Surveys of Great Salt Lake, 1852, p. 374. The prothorax is brilliant green, and the extremely coarse, close, confluent punctuation gives it a scabrous appearance. The elytra are reddish brown, very hairy. Originally described from the valley of Great Salt Lake, but specimens are in my collection from northern Colorado, Nevada (Verdi), and Washington, (North Yakima). The Death Valley expedition took it in the Argus Mountains.

*C. puncticollis* LeConte, Smithsonian Misc. Coll., 167, 1863, p. 78. Described from New Mexico, whence I have a specimen loaned by Mr. Fuchs. Mr. Liebeck has examined the series in the Horn collection, and writes that the set contains six specimens from Arizona, besides the presumptive type from New Mexico. Some of these specimens have the elytra dark while in the others they are greenish yellow. The prothorax is bright green. The thoracic punctures are umbilicate, of irregular size and closely placed, though not confluent to the extent seen in the preceding species, and the hairs are coarse and sparse. The hairs of the elytra are also coarse and easily removed; they are arranged in comparatively regular series along the suture, the outer margin and the three discal costæ.

*C. ursina* Horn, Trans. Amer. Ent. Soc., I, 1867, p. 168. The smallest species of the genus, easily recognized by the deeply but not confluent punctured blue-black or greenish black prothorax and reddish elytra. It is a plumper form than *C. granicollis*. Occurs at various points in California and the Peninsula. According to Professor Fall, it flies by day and may sometimes be seen in quantities, clinging to cypress hedges.